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To the Secretary

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Federal Communications Commission
1919 M Street, N.W.
Washington DC 20554

Petition for Rulemaking

Hawthorne WI FM Channel 293A (106.5 mHz)

Submitted by:

Bruce F. Elving, Ph.D., petitioner, on his own behalf

FM Atlas Publishing
P. O. Box 336
Esko MN 55733-0336

April 16, 1997
(218) 879-7676
Fax (218) 879-8333

This is a request that the frequency 106.5 (channel 293A) be added to the FM radio Table of Allocations for Hawthorne WI.

As can be seen from the enclosed Technical Program by Steve Schott, the site-to-site distances from the geographic coordinates at the site I selected--namely, 46-30-30; 91-59-04--meet all the separation requirements of Sec. 73.207 of the rules of the Federal Communications Commission. This site is approximately nine km due west of Hawthorne.

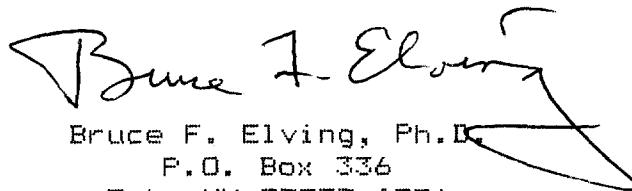
Hawthorne is a small community 30 km southeast of Superior WI along Old U.S. Highway 53. It lacks any local radio or TV stations, commercial or educational. It is a rural community of about 500 persons. It has at least two businesses and a post office. It is near South Range, Maple, Poplar, Bennett, Wentworth and Lake Nebagamon WI--other small communities without local radio or TV stations. It is on the periphery of the Superior-Duluth (MN) market; however, there is enough population and community interest, I believe, to support a commercial FM station in this area of rural Douglas County WI; plus there is a need for

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community public service and school closing announcements that local radio can provide. It is a summer resort area and winter snowmobiling and cross-country skiing destination.

If this channel is allocated to Hawthorne, I, Bruce F. Elving, plan to apply for it. In accordance with Sec. [73]1.52 of the Commission's rules, I am signing and verifying this petition in my behalf.

Respectfully submitted,



A handwritten signature in black ink, appearing to read "Bruce F. Elving". The signature is fluid and cursive, with "Bruce" on top and "F. Elving" below it.

Bruce F. Elving, Ph.D.
P.O. Box 336
Esko MN 55733-0336

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TECHNICAL PROGRAMS

By Steve Schott - Continental Electronics - April 1987

A - FM OPERATING PARAMETERS	(Xmtr TFO, line loss, etc.)
B - FM COVERAGE CONTOURS	(Distance to F.S. Contours)
C - COAXIAL CABLE RATINGS	(Derating for Temp, Pressure, VSWR)
D - FM POWER CHART	(Prints Chart of PA Ep vs. Ip)
E - STL CALCULATIONS	(Gains, Losses, & Path Clearance)
F - METRIC CONVERSION	(Converts Number to Any Unit)
G - DECIBEL CONVERSION	(Calculates dB, E, I, or P)
✓H - DISTANCE & BEARING	(Approximation of FCC Method)
I - VERTICAL FM PATTERN	(Plots Vertical FM Field Pattern)
J - T-NETWORK DESIGN	(Calculates T-Network Components)
K - REDUCED FM E.R.P.	(Finds ERP Above Maximum Heights)
L - SATELLITE FIND	(Finds Azimuth, Heading, Elevation)
M - H-PAD ATTENUATOR	(Design H-Pad & Standard Resistors)
N - TRANSMITTER EFFICIENCY	(Calculates Operating Costs)
Q - QUIT	(Return to System)

User is responsible for software use. If errors found, call (214) 423-3644.
SELECT PROGRAM

SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD

Coordinates A for 293A allotment, approx. 9 km west of Hawthorne WI at 46-30-30; 91-59-04

COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"

COORDINATES B to WMFG-FM Hibbing MN, 292C1 (106.3) one-step application (from 292A)

LATITUDE: 47° 19' 31.0" LONGITUDE: 93° 16' 18.0"

Distance: 83.02 Miles
133.57 Kilometers
Required: 133 km. Margin: .57 km-close!

Bearing: N 312.8 E Degrees

A - Change Coordinates A B - Change Coordinates B Q - Quit

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© SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD ©
†

COORDINATES A

LATITUDE: $46^{\circ} 30' 30.0''$ LONGITUDE: $91^{\circ} 59' 4.0''$
Distance: 113.70 Miles Bearing: N 226.9 E Degrees
182.94 Kilometers Required: 106 km. Margin: 76.94 km

COORDINATES B to WQPM-FM Princeton MN, 291C2 (106.1)

LATITUDE: $45^{\circ} 23' 0.0''$ LONGITUDE: $93^{\circ} 42' 30.0''$
Distance: 113.70 Miles Bearing: N 226.9 E Degrees
182.94 Kilometers Required: 106 km. Margin: 76.94 km

A - Change Coordinates A B - Change Coordinates B Q - Quit

© SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD ©
†

COORDINATES A

LATITUDE: $46^{\circ} 30' 30.0''$ LONGITUDE: $91^{\circ} 59' 4.0''$
Distance: 113.70 Miles Bearing: N 226.9 E Degrees
182.94 Kilometers Required: 106 km. Margin: 76.94 km

COORDINATES B to WEGZ Washburn WI, 290C1 (105.9)

LATITUDE: $46^{\circ} 41' 31.0''$ LONGITUDE: $90^{\circ} 59' 27.0''$
Distance: 48.95 Miles Bearing: N 75.0 E Degrees
78.76 Kilometers Required: 75 km. Margin: 3.76 km

A - Change Coordinates A B - Change Coordinates B Q - Quit

SITE TO SITE DISTANCE PROGRAM -- COORDINATES -- FCC METHOD -- HUH
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COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"
aa

COORDINATES B to WUPM Ironwood MI, 295C1 (106.9)

LATITUDE: 46° 28' 18.0" LONGITUDE: 90° 0' 43.0"
aa

Distance: 94.08 Miles Bearing: N 91.5 E Degrees
151.37 Kilometers
Required: 75 km. Margin: 76.37 km

A - Change Coordinates A B - Change Coordinates B Q - Quit

SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD

COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"
aa

COORDINATES B to KAOD (CP) Babbitt MN, 294C2 (106.7)

LATITUDE: 47° 41' 18.0" LONGITUDE: 91° 54' 15.0"
aa

Distance: 81.60 Miles Bearing: N 2.7 E Degrees
131.29 Kilometers
Required: 106 km. Margin: 25.29 km

A - Change Coordinates A B - Change Coordinates B Q - Quit

SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD

COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"
aa

COORDINATES B to WJJY Brainerd MN, 294C1 (106.7)

LATITUDE: 46° 26' 36.0" LONGITUDE: 94° 22' 58.0"
aa

Distance: 114.46 Miles Bearing: N 267.8 E Degrees
184.17 Kilometers
Required: 133 km. Margin: 51.17 km

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* SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD *

COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"

COORDINATES B to WATQ Chetek WI, 294C2 (106.7). [WATQ is a construction permit.]

LATITUDE: 45° 13' 12.0" LONGITUDE: 91° 40' 56.0"

Distance: 90.16 Miles
145.07 Kilometers
Required: 106 km. Margin: 39.07 km

Bearing: N 170.7 E Degrees

* SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD *

COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"

COORDINATES B to KDAL-FM Duluth MN, 239C1 (95.7), I-F relationship

LATITUDE: 46° 47' 7.0" LONGITUDE: 92° 7' 15.0"

Distance: 20.20 Miles
32.50 Kilometers
Required: 12 km. Margin: 20.5 km

Bearing: N 341.3 E Degrees

* SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD *

COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"

COORDINATES B to (new, Agate Broadcasting CP) Moose Lake MN, 296C3 (107.1)

LATITUDE: 46° 30' 30.0" LONGITUDE: 92° 46' 48.0"

Distance: 37.92 Miles
61.01 Kilometers
Required: 42 km. Margin: 19.01 km

Bearing: N 270.0 E Degrees

* SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD *

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COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"

COORDINATES B to WLJY Marshfield WI, 293C1 (106.5)

LATITUDE: 44° 38' 41.0" LONGITUDE: 89° 51' 11.0"

Distance: 165.04 Miles

Bearing: N 141.2 E Degrees

265.54 Kilometers

Required: 200 km. Margin: 65.54 km

* A SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD *

COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"

COORDINATES B to T. Beschta Spooner WI 292A (106.3) application

LATITUDE: 45° 50' 32.0" LONGITUDE: 91° 54' 6.0"

Distance: 46.18 Miles

Bearing: N 175.1 E Degrees

74.30 Kilometers

Required: 72 km. Margin: 2.3 km

* A SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD *

COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"

COORDINATES B to Wm. Gronberg Spooner WI 292A (106.3) application

LATITUDE: 45° 47' 43.0" LONGITUDE: 91° 55' 0.0"

Distance: 49.35 Miles

Bearing: N 176.2 E Degrees

79.41 Kilometers

Required: 72 km. Margin: 7.41 km

A - Change Coordinates A

B - Change Coordinates B

Q - Quit

SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES --- TWO METHODS

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COORDINATES A

LATITUDE: 46° 30' 30.0" LONGITUDE: 91° 59' 4.0"

COORDINATES B to Betty Lutz Spooner WI 292A (106.3) application

LATITUDE: 45° 45' 23.0" LONGITUDE: 91° 54' 51.0"

Distance: 52.04 Miles Bearing: N 176.3 E Degrees
 83.74 Kilometers

Required: 72 km, Margin: 11.74 km

Required: 72 km, Margin: 11.74 km

A - Change Coordinates A B - Change Coordinates B Q - Quit

* SITE TO SITE DISTANCE USING GEOGRAPHICAL COORDINATES -- FCC METHOD *

COORDINATES A

LATITUDE: $46^{\circ} 30' 30.0''$ LONGITUDE: $91^{\circ} 59' 4.0''$

COORDINATES B to Quarnstrom Spooner WI 292A (106.3) application

LATITUDE: 45° 50' 21.0" LONGITUDE: 91° 58' 6.0"

Distance: 46.22 Miles Bearing: N 179.0 E Degrees
 74.37 Kilometers
Required: 72 km. Margin: 2.37 km

Required: 72 km. Margin: 2.37 km

A - Change Coordinates A B - Change Coordinates B Q - Quit